

# Ultra Miniature Ceramic SMD Crystal



ABM10-165

2.5 x 2.0 x 0.5 mm

**ABM10-165-38.400MHz-T3**

**RoHS/RoHS II Compliant**

Moisture Sensitivity Level (MSL) – This product is Hermetically Sealed and not Moisture Sensitive - MSL = N/A: Not Applicable

## FEATURES:

- Low profile, miniature size: 2.5 x 2.0 x 0.5mm SMD
- RoHS compliant
- Overall frequency stability:  $\pm 20$ ppm over -30 ~ +85°C
- Low aging

## APPLICATIONS:

- Decawave DW1000 (IEEE802.15.4-2011 UWB)
- UWB applications
- Real Time Location Systems
- Wireless Sensor Networks

## STANDARD SPECIFICATIONS:

Parameters	Minimum	Typical	Maximum	Units	Notes
Frequency	38.400			MHz	
Operation Mode	Fundamental				
Operating Temperature	-30		+85	°C	
Storage Temperature	-40		+85	°C	
Overall Frequency Stability	-20		+20	ppm	See Note 1
Initial Calibration + Frequency Stability over the Operating Temperature	-15		+20	ppm	See Note 2
Frequency Shift vs Reflow + Aging	-5		0	ppm	See Note 3
Frequency Perturbations			1	ppm	See Note 4
Long-term Stability	-1		+1	ppm	See Note 5
Equivalent Series Resistance (ESR)			40	$\Omega$	
Load Capacitance (CL)	10			pF	
Drive Level			50	$\mu$ W	
Insulation Resistance	500			M $\Omega$	@100V $\pm$ 15V, 25°C

Note:

1. Including initial calibration, reflow, frequency verses temperature and 5-years aging at 25°C.
2. Referenced to nominal frequency at specified load capacitance over the operating temperature range.
3. Two consecutive reflow as per the profile in Section 6.1 after 24 hours recovery at 25°C. Frequency drift over 5 years at 25°C.
4. Peak-to-peak deviation from the frequency vs. temperature curve fit 5<sup>th</sup> order. Minimum of 1 frequency reading every 3°C over operating temperature range.
5. Frequency drift over 1 year at 25°C.

## OPTIONS & PART IDENTIFICATION: (Left blank if standard)

ABM10-165-38.400MHz -

<b>Packing</b>
Blank: Bulk
T3: Tape & Reel (3k/reel)

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2.5 x 2.0 x 0.5 mm

## OUTLINE DRAWING:

TOP VIEW

FRONT VIEW

BOTTOM VIEW

### Recommended Land Pattern

Pin	Function
1	Crystal
2	GND
3	Crystal
4	GND

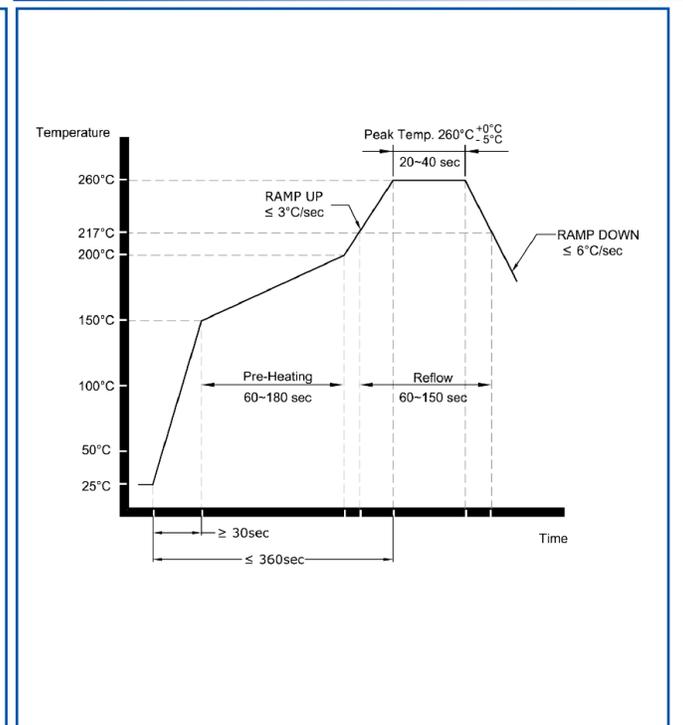
**Dimensions: mm**

## TAPE & REEL:

Packaging: 3000pcs/reel

**Dimensions: mm**

## REFLOW PROFILE:



Need a test socket for the ABM10 Series? To view compatible **PRECISION TEST & BURN-IN SOCKETS** for these parts, [click here](#). P/N: **AXS-2520-04-10**

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